

Abstract

A feedstock composition and a method of forming metal articles using powder metallurgy techniques comprise mixing metal powders and a novel aromatic binder system. The composition of the novel feedstock comprises an aromatic binder system and a metal powder. The aromatic binder system comprises an aromatic species and can further comprise lubricants, surfactants, and polymers as additives. The metal powder comprises elemental metals, metal compounds, and metal alloys, particularly for highly-reactive metals. The method of forming metal articles comprises the steps of providing and mixing the metal powder and the aromatic binder system to produce a novel feedstock. The method further comprises processing the novel feedstock into a metal article using a powder metallurgy forming technique. Metal articles formed using the present invention have an increase in carbon and oxygen contents each less than or equal to 0.2 wt% relative to the metal powder used to fabricate the article.